NGK RUTHENIUM HX™

NGK Spark Plugs is introducing the latest technology in high ignitability spark plugs to the automotive aftermarket: NGK RUTHENIUM HX ™. Today's efficient engine designs create more power while using less fuel and shortens the life of traditional Iridium and Platinum spark plugs. In response, NGK's patented Ruthenium technology is used for maximum durability and performance in newer engines where more efficiency is demanded.

The NGK Difference

Patented OEM Ruthenium Technology
Addresses the advanced technology of today's modern engines by offering an Aftermarket replacement to the OE special-tip plug designs

Ruthenium HX
covers over 93% of 2005-2018 high ignitability vehicles on the road today

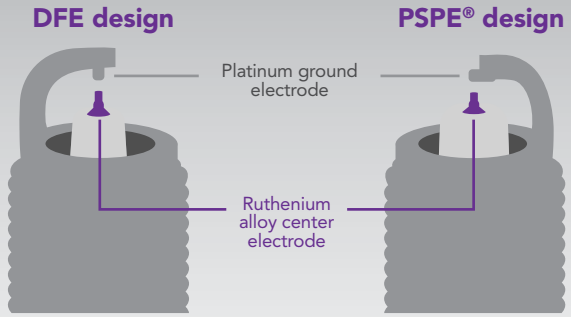
Ruthenium Alloy
Increases durability that provides the longest service life for turbo or direct injection engines

How does NGK RUTHENIUM HX™ compare to other spark plugs?

Ruthenium HX utilizes the two most advanced high ignitability spark plug tip designs offered today:

Double Fine Electrode (DFE):
maximizes ignitability while reducing emissions for low heat engines. This NGK-patented design is recommended for non-turbo applications.

Projected Square Platinum Electrode (PSPE®):
provides the best ignitability and service life for high heat engines. This NGK-patented design is recommended for turbo and supercharged engines.



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Tech Support: (877) 473-6767 ext. 2

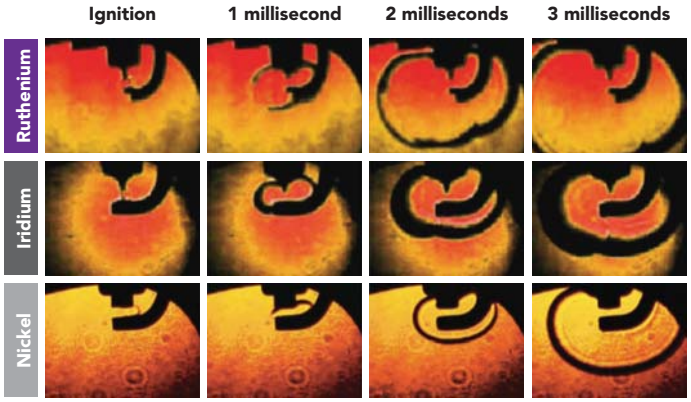
THE IGNITION SPECIALIST™

DURABILITY *Illustration B*

NGK's patented Ruthenium technology is available in our most advanced OEM designs to provide the most optimal durability at high temperatures in various driving conditions.

HIGH IGNITABILITY *Illustration C*

NGK RUTHENIUM HX™ provides more complete fuel burn than other precious metal spark plugs. The results are quicker throttle response, smoother idle and better cold starts.



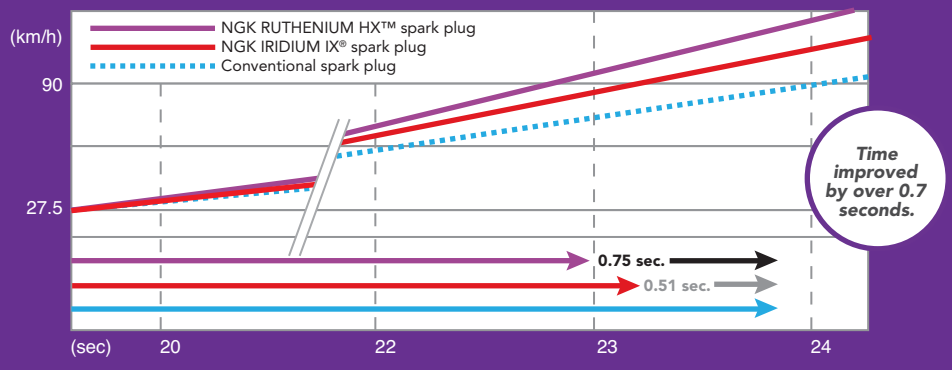
Note: Based on flame kernel growth tests comparing a NGK RUTHENIUM HX™ PSPE® design with Iridium and Nickel J-gap designs.

TESTING & MANUFACTURING

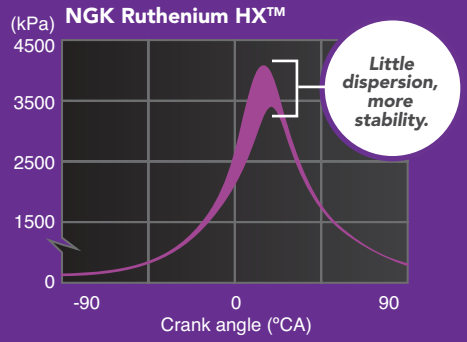
All NGK spark plugs must pass extensive testing procedures and quality checks to ensure fit and performance.

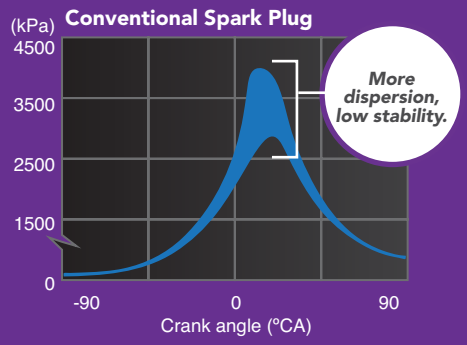
- **Combustion pressure testing to maintain stable performance** *(Diagram 1)*
- **Acceleration testing for improved acceleration performance** *(Diagram 2)*
- **Mechanical vibration testing**
- **Thermal shock testing to -40°F**
- **Tightest resistor manufacturing process in the industry**
- **Manufacturing in our ISO 11565 certified manufacturing facility**
- **Gap measurement with laser precision throughout production process**
- **Center electrodes are accurately positioned with 360° welding process**

ACCELERATION TEST *Diagram 2*



COMBUSTION PRESSURE TEST *Diagram 1*





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NGK SPARK PLUGS

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